

Abstract of the Disclosure

An oxidation resistant, microporous polyolefin web exhibiting high-strength mechanical and low electrical resistance properties is a solid matrix that includes an ultrahigh molecular weight polyolefin component and a friable precipitated silica component. The ultrahigh molecular weight polyolefin component provides high-strength mechanical properties to the web. The friable precipitated silica component is broken down into predominately discrete silica aggregates dispersed throughout the microporous web to maintain a low electrical resistance in the presence of an electrolyte. In an alternative preferred embodiment, a polyethylene web includes an antioxidant coating that is applied to the separator web following extraction of the majority of the process oils and drying of the extraction fluid from the separator pores. The resultant "sheath" of antioxidant protects the mechanical integrity of the polyethylene separator by suppressing polyethylene degradation.